

monthly precipitation. The inset on this chart shows the departure of the monthly totals from the corresponding normals.

Chart V.—Percentage of clear sky between sunrise and sunset. The average cloudiness at each Weather Bureau station is determined by numerous personal observations between sunrise and sunset. The difference between the observed cloudiness and 100 is assumed to represent the percentage of clear sky, and the values thus obtained are the basis of this chart. The chart does not relate to the nighttime.

Chart VI.—Isobars at sea level, average surface temperatures, and prevailing wind directions. The pressures have been reduced to sea level and standard gravity by the method described by Prof. Frank H. Bigelow on pages 13–16 of the REVIEW for January, 1902. The pressures have also been reduced to the mean of the 24 hours by the application of a suitable correction to the mean of 8 a. m. and 8 p. m. readings at stations taking two observations daily, and to the 8 a. m. or the 8 p. m. observation, respectively, at stations taking but

a single observation. The diurnal corrections so applied will be found in the Annual Report of the Chief of the Weather Bureau, 1900–1901, volume 2, Table 27, pages 140–164.

The sea level temperatures are now omitted and average surface temperatures substituted. The isotherms can not be drawn in such detail as might be desired, for data from only the regular Weather Bureau stations are used.

The prevailing wind directions are determined from hourly observations at the great majority of the stations. A few stations determine the prevailing direction from the daily or twice-daily observations only.

Chart VII.—Total snowfall. This is based on the reports from regular and cooperative observers and shows the depth in inches of the snowfall during the month. In general, the depth is shown by lines inclosing areas of equal snowfall, but in special cases figures are also given. This chart is published only when the snowfall is sufficiently extensive to justify its preparation.

Charts VIII, IX, etc.—North Atlantic weather maps of particular days.

CONDENSED CLIMATOLOGICAL SUMMARY.

In the following table are given for the various sections of the climatological service of the Weather Bureau the monthly average temperature and total rainfall; the stations reporting the highest and lowest temperatures, with dates of occurrence; the stations reporting the greatest and least total precipitation; and other data as indicated by the several headings.

The mean temperature for each section, the highest and lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperatures and precipitation are based only on records from stations that have 10 or more years of observations. Of course, the number of such records is smaller than the total number of stations.

Condensed climatological summary of temperature and precipitation by sections, January, 1924.

Section.	Temperature.										Precipitation.										
	Section average.		Departure from the normal.	Monthly extremes.						Section average.		Departure from the normal.	Greatest monthly.				Least monthly.				
	° F.	° F.		Station.	Highest.	Date.	Station.	Lowest.	Date.	In.	In.		Station.	Amount.	Station.	Amount.	Station.	Amount.	Station.	Amount.	
Alabama.....	41.8	-4.7	3 stations.....	75	11	Valley Head.....	-2	5	6.67	+1.73	Pushmataha.....	9.32	Cahira.....	3.99							
Arizona.....	40.5	-2.0	Yuma Citrus Station	81	130	Williams.....	-16	1	0.09	-1.32	Henry's Camp.....	0.64	45 stations.....	0.00							
Arkansas.....	36.1	-4.8	Rison.....	79	31	4 stations.....	-6	5	3.19	-1.04	Warren.....	6.50	Searcy.....	1.05							
California.....	45.3	-0.5	Barrett Dam.....	86	30	Helm Creek.....	-33	2	1.97	-3.52	Wright.....	7.02	8 stations.....	0.00							
Colorado.....	20.1	-4.4	Las Animas.....	74	31	4 stations.....	-40	15	0.38	-0.50	Steamboat Springs.....	2.07	2 stations.....	0.00							
Florida.....	59.9	+0.6	2 stations.....	88	1	do.....	12	6	4.12	+1.25	Cottage Hill.....	8.79	St. Leo.....	1.66							
Georgia.....	43.3	-3.5	St. George.....	81	3	Clayton.....	-9	6	5.39	+1.45	Clayton.....	11.58	Savannah.....	2.78							
Idaho.....	19.8	-3.7	Burley.....	57	31	3 stations.....	-33	4	1.04	-1.18	Priest River Ex. Sta. tion.....	4.08	American Falls.....	T.							
Illinois.....	21.9	-4.6	Carbondale.....	62	130	Freeport.....	-25	5	1.78	-0.66	Goleonda.....	3.16	Roberts.....	0.70							
Indiana.....	23.8	-4.8	Hickory Hill.....	60	29	2 stations.....	-20	21	2.97	-0.22	Jeffersonville.....	4.76	Howe.....	1.20							
Iowa.....	13.9	-4.0	Keokuk.....	59	8	Washta.....	-36	5	0.89	-0.16	Waverly.....	2.47	Storm Lake.....	0.06							
Kansas.....	26.2	-3.6	2 stations.....	67	18	Centralia.....	-27	5	0.39	-0.26	Walnut.....	1.61	11 stations.....	T.							
Kentucky.....	31.3	-4.2	do.....	66	11	2 stations.....	-8	15	5.02	+0.64	Glasgow.....	6.96	Sargent.....	3.36							
Louisiana.....	46.7	-4.5	do.....	80	12	Kelly (near).....	8	6	6.39	+1.84	Baton Rouge.....	8.98	Icaradis.....	3.25							
Maryland-Delaware.....	33.7	+1.1	3 stations.....	67	11	Frostburg, Md.....	-10	6	4.06	+0.78	Woodstock, Md.....	6.10	Solomons, Md.....	2.45							
Michigan.....	15.8	-3.7	Harbor Beach.....	55	5	Bergland.....	-30	21	2.26	+0.36	Grand Marais.....	5.73	St. Ignaw.....	1.04							
Minnesota.....	3.0	-5.1	Canby.....	60	29	Itasca State Park.....	-47	6	0.37	-0.40	do.....	1.35	Alexandria.....	0.00							
Mississippi.....	42.2	-5.1	Shubuta.....	78	1	2 stations.....	2	6	0.56	+1.59	Magnolia.....	10.38	Hernando.....	3.84							
Missouri.....	24.9	-5.5	2 stations.....	68	31	Conception.....	-25	5	1.54	-0.49	Caruthersville.....	4.44	Maryville.....	0.23							
Montana.....	15.6	-2.9	Hays.....	63	31	Kinread.....	-53	1	0.68	-0.31	Trout Creek.....	2.97	Savage.....	0.00							
Nebraska.....	17.4	-4.6	McCook.....	68	30	Gordon.....	-37	5	0.34	-0.22	Tecumseh.....	1.70	1 station.....	0.00							
Nevada.....	25.4	-5.8	Pahrump.....	75	26	Millett.....	-31	6	0.34	-0.76	Austin.....	1.10	3 stations.....	0.00							
New England.....	23.6	+2.8	Plymouth, Mass.....	68	12	2 stations.....	-34	28	3.72	+0.35	Kingston, R. I.....	6.40	Rutland, Mass.....	1.09							
New Jersey.....	32.2	+2.2	Little Falls.....	65	11	Culvers Lake.....	-6	27	4.48	+0.83	Charlotteburg.....	5.69	Sussex.....	2.88							
New Mexico.....	30.6	-3.2	Pearl.....	74	31	Dulce.....	-24	5	0.21	-0.40	Lake Alice.....	1.43	15 stations.....	0.00							
New York.....	24.9	+2.0	Ballston Lake.....	62	11	2 stations.....	-40	27	3.26	+0.30	Lowville.....	7.97	Chezy.....	0.65							
North Carolina.....	39.6	-1.6	Greenville.....	75	9	Banners Elk.....	-12	6	4.75	+1.01	Highlands.....	8.67	Parker.....	2.04							
North Dakota.....	2.6	-2.3	Berthold Agency.....	61	31	Dunseth.....	-42	11	0.23	-0.31	Hannah.....	0.96	3 stations.....	0.00							
Ohio.....	25.0	-3.3	Clarington.....	64	1	Fauding.....	-16	22	3.73	+0.63	Bucyrus.....	5.87	Bowling Green.....	1.38							
Oklahoma.....	34.7	-4.0	Altus.....	76	30	Goodwell.....	-10	17	0.72	-0.65	Antlers.....	3.80	4 stations.....	0.00							
Oregon.....	31.3	-1.4	2 stations.....	69	130	Madras.....	-24	1	2.46	-2.14	Government Camp.....	9.73	Silver Lake.....	0.12							
Pennsylvania.....	28.1	+0.3	New Castle.....	65	1	Montrose.....	-13	28	4.34	+1.05	Phoenixville.....	6.29	Lawrenceville.....	1.70							
South Carolina.....	43.3	-2.3	2 stations.....	76	3	Landrum.....	1	6	4.34	+0.88	Walhalla.....	6.20	Minneapolis.....	2.04							
South Dakota.....	10.7	-4.6	Rapid City.....	58	31	Ia Delle.....	-41	6	0.21	-0.31	Harveys Ranch.....	1.10	10 stations.....	T.							
Tennessee.....	34.2	-4.8	Sevierville.....	71	10	Rugby.....	-13	6	5.87	+0.92	Lynnville.....	8.82	Kenton.....	3.92							
Texas.....	43.5	-4.9	2 stations.....	86	13	Dalhart.....	-5	1	1.73	-0.02	Willis.....	7.75	18 stations.....	0.00							
Utah.....	20.1	-5.3	Leeds.....	68	31	J. Languijich.....	-30	5	0.47	-0.84	Silver Lake.....	2.49	McCornick.....	0.00							
Virginia.....	35.3	-0.7	Runnymede.....	75	11	Burkes Garden.....	-12	6	3.93	+0.62	Mendota.....	6.78	Norfolk.....	1.96							
Washington.....	29.6	-1.4	Kennewick.....	69	31	Snyders Ranch.....	-33	1	3.50	-1.15	Forks.....	18.47	Attalia.....	0.07							
West Virginia.....	30.1	-2.7	Clarksburg.....	70	12	Cheat Bridge.....	-15	6	4.62	+0.57	Cheat Bridge.....	7.14	White Sulphur Springs.....	0.62							
Wisconsin.....	6.7	-7.2	Kilbourn.....	48	30	Hatfield.....	-44	4	0.81	-0.43	Beloit.....	2.09	Grantsburg.....	0.08							
Wyoming.....	15.1	-4.2	3 stations.....	57	130	4 stations.....	-42	1	0.52	-0.33	Bedford.....	1.38	3 stations.....	T.							

¹ Other dates also.

MONTHLY WEATHER REVIEW.

JANUARY, 1924

TABLE 1.—Climatological data for Weather Bureau stations, January, 1924.

Districts and stations.	Elevation of instruments.		Pressure.						Temperature of the air.						Precipitation.			Wind.															
	Barometer above sea level.	Thermometer above ground.	Ft.	Ft.	In.	In.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	%	In.	In.	Miles.	Total movement.	Prevailing direction.	Miles per hour.	Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Total snowfall.							
	Anerometer above ground.	Station, reduced to mean of 24 hours.	Sea level reduced to mean of 24 hours.	Departure from normal.	Mean max. + mean min. + 2.	Maximum.	Mean maximum.	Minimum.	Mean minimum.	Greatest daily range.	Mean relative humidity.	Mean temperature of the dew point.	Mean wet thermometer.	0-10 5.8	In.	In.			Date.	Date.	Date.	Date.	Date.	Date.	Date.	Show, sleet, and ice on ground at end of month.							
New England.							27.4	+3.0																									
Eastport.....	76	67	85	29.96	30.04	+ .04	22.4	+2.0	50	11	32	-19	27	13	54	20	14	71	3.62	-0.2	17	9,516	w.	47	se.	17	10	6	15	6.2	15.4	0.3	
Greenville, Me.....	1,070	6	28	28.82	30.04	+ .04	13.9	-	41	30	25	-26	27	2	49	22	16	70	2.55	+0.7	10	11	7,765	se.	39	se.	16	13	15	3	18.5	17.0	
Portland, Me.....	103	82	117	29.97	30.10	+ .05	23.3	+1.9	48	11	34	-18	27	13	48	22	16	70	4.50	+0.7	11	11	8,439	w.	36	w.	21	11	8	12	5.5	24.1	5.5
Concord.....	238	70	79	29.76	30.09	+ .04	21.1	+1.5	51	11	34	-18	27	13	40	20	16	70	3.82	+0.5	8,449	s.	44	nw.	21	2	7	22	7.9	12.4	T.		
Burlington.....	404	11	48	29.62	30.09	+ .04	19.5	+4.6	51	11	31	-20	19	28	8	42	17	13	80	2.24	+0.6	12	10,424	s.	35	sw.	26	3	9	19	7.5	21.7	3.8
Northfield.....	876	12	60	29.10	30.09	+ .04	19.5	+4.6	53	11	31	-20	19	28	8	42	17	13	80	3.27	+0.6	15	8,743	w.	50	w.	21	12	10	13	5.0	8.5	0.0
Boston.....	125	115	188	29.97	30.11	+ .06	31.9	+4.0	61	11	49	-6	27	21	27	35	31	28	80	4.36	+0.5	8,191	s.	57	se.	16	11	4	16	6.0	0.4	0.0	
Nantucket.....	12	90	30.10	30.11	+ .07	34.0	+1.9	57	11	41	-5	27	21	27	35	31	28	80	4.36	+0.5	10,18,201	nw.	62	nw.	21	11	11	11	5.0	5.0	0.0		
Block Island.....	26	11	46	30.09	30.12	+ .05	33.2	+2.2	53	11	40	-3	27	20	36	31	28	70	4.13	+0.5	9,911	815	72	nw.	21	13	11	7	4.7	5.0	0.0		
Providence.....	160	251	29.95	30.13	+ .07	30.8	+3.6	59	11	39	-2	27	21	30	37	30	28	70	3.70	+0.1	8	...	11	12	10	9	5.2	4.0	0.0				
Hartford.....	159	122	140	29.97	30.14	+ .07	29.8	+4.3	59	11	39	-2	27	21	30	37	30	28	70	4.50	+0.6	7,8,279	sw.	52	s.	11	13	8	10	4.6	2.9	0.0	
New Haven.....	106	74	153	30.03	30.16	+ .08	31.2	+3.0	56	11	39	0	27	23	28	28	22	70	4.13	+0.5	9,911	815	72	nw.	21	13	11	7	4.7	5.0	0.0		
Middle Atlantic States.							33.5	+1.6										70	3.32	+0.3									5.3				
Albany.....	97	102	115	30.03	30.14	+ .07	27.0	+3.9	57	11	35	-11	27	19	33	24	19	72	2.12	-0.5	10	6,536	s.	32	s.	11	11	8	12	5.5	5.5	T.	
Binghamton.....	871	10	84	29.14	30.10	+ .02	27.8	+4.7	56	11	38	0	22	19	32	21	16	61	3.56	-0.2	6,16,924	nw.	74	nw.	25	10	9	12	5.5	2.5	0.0		
New York.....	314	414	454	29.82	30.17	+ .07	32.5	+1.6	57	16	41	-4	22	24	25	28	21	67	5.05	+2.2	6,5,527	nw.	33	sw.	25	9	8	16	6.0	2.5	T.		
Harrisburg.....	374	94	104	29.79	30.21	+ .11	30.8	+1.8	57	11	38	4	21	23	26	28	20	67	4.45	+1.0	6,8,618	n.	42	sw.	11	12	12	12	5.2	2.0	0.0		
Philadelphia.....	114	123	190	30.07	30.21	+ .10	34.6	+2.0	61	11	43	6	22	27	28	30	22	62	4.62	+1.1	6,5,514	nw.	37	e.	25	12	10	9	5.3	2.0	0.0		
Reading.....	325	81	98	29.83	30.20	+ .07	31.3	+0.5	57	11	39	4	22	27	28	30	22	70	3.73	+0.9	8,7,127	s.	42	sw.	1	14	6	11	6.3	2.9	T.		
Scranton.....	805	111	119	29.27	30.16	+ .07	30.9	+3.5	55	11	33	0	27	20	27	26	21	76	3.28	-0.1	8,15,218	nw.	80	se.	16	14	6	11	4.6	0.0	T.		
Atlantic City.....	52	37	172	30.14	30.20	+ .09	35.2	+2.7	60	11	43	6	22	27	28	30	22	75	3.33	0	11,8,240	s.	68	n.	16	14	4	13	5.0	5.0	T.		
Cape May.....	17	13	49	30.22	30.24	+ .12	35.6	+1.5	55	11	43	9	22	27	28	30	22	72	5.13	0	7,14,604	w.	72	s.	11	11	8	12	5.5	5.5	T.		
Sandy Hook.....	22	10	55	30.15	30.17	+ .08	32.6	-	56	11	40	6	22	28	24	29	22	67	4.71	+1.5	6,10,774	nw.	62	nw.	25	12	10	9	5.0	0.0	0.0		
Trenton.....	190	159	183	29.97	30.19	+ .09	34.8	+1.6	60	11	43	7	22	26	28	30	22	67	4.33	+1.1	6,1,601	nw.	32	se.	16	11	9	11	5.2	0.4	0.0		
Baltimore.....	12	100	113	30.07	30.21	+ .09	34.8	+1.6	60	11	43	7	22	26	28	30	22	65	3.21	+0.2	6,5,564	nw.	44	nw.	5	12	9	11	5.5	0.5	0.0		
Washington.....	112	82	95	30.09	30.22	+ .09	34.9	+1.6	63	11	44	6	22	26	28	30	22	68	3.38	0.0	10,11,499	s.	48	n.	1	14	4	13	5.1	0.0	0.0		
Cape Henry.....	18	8	54	30.19	30.21	+ .09	41.9	-	60	11	50	14	6	34	29	38	34	80	3.37	-0.4	7,5,599	w.	46	w.	11	15	7	9	4.4	0.8	0.0		
Lynchburg.....	631	153	188	29.45	30.22	+ .09	36.2	-1.3	67	11	48	3	22	35	32	39	25	68	1.96	-1.4	9,10,893	n.	56	s.	16	14	4	13	5.1	0.0	0.0		
Norfolk.....	91	170	205	30.13	30.23	+ .10	34.2	+2.1	63	11	41	-5	22	35	32	39	26	73	3.49	-0.8	5,6,692	w.	36	w.	11	15	5	13	5.2	0.0	0.0		
Wytheville.....	2,304	49	55	27.76	30.26	+ .12	30.6	-2.4	58	11	41	-5	22	35	32	39	26	73	3.49	-0.8	5,6,692	w.	36	w.	11	13	5	13	5.2	0.0	0.0		
South Atlantic States.							44.3	-1.3										75	3.79	+0.2									5.4				
Asheville.....	2,255	70	84	27.81	30.28	+ .13	33.6	-1.8	60	10	45	-5	6	24	28	31	23	73	3.74	+0.9	8,7,985	nw.	46	s.	10	14	9	8	4.2	4.2	0.0		
Charlotte.....	779	55	62	29.36	30.22	+ .07	40.0	-1.2	67	10	50	-3	33	20	24	28	21	73	3.93	-0.3	9,3,969	w.	25	w.	11	14	2	12	5.7	0.0	0.0		
Hatteras.....	11	11	50	30.20	30.21	+ .07	46.4	-0.7	69	3	53	17	6	38	24	44	41	83	5.40	+0.5	13,11,659	n.	46	nw.	6	12	6	10	5.0	0.0	0.0		
Manteo.....	12	5	42				44.2	-	68	3	51	14	6	32	24	32	23	73	2.54	0	ne.	16	15	5	13	5.7	0.0	0.0					
Raleigh.....	376	103	110	29.82	30.24	+ .11	40.3	-0.3	65	10	51	1	51	7	30	31	20	73	3.84	+0.3	8,6,181	n.	41	sw.	16	13	5	13	5.2	0.0	0.0		
Wilmingtn.....	78	81	91	30.15	30.24	+ .10	47.2	+0.7	71	10	57	12	6	37	30	42	38	78	2.21	-1.3	12,5,519	s.	38	s.	16	15	2	14	5.1	0.0	0.0		
Charleston.....	48	11	92	30.17	30.22	+ .07	48.9	-1.0	71	10	57	17	6	41	26	40	46	76	3.24	-0.2	10,7,760	ne.	40	sw.	16	13	5	13	5.0	0.0	0.0		
Columbia, S. C.....	351	41	57	29.85	30.25	+ .10	43.6	-2.4	69	1	51	10	6	32	35	38	33	73	3.37	+0.1	10,4,903	ne.	32	s.	16	13	5	13	5.2	0.0	0.0		
Due West.....	711	10	55	29.46	30.26	+ .09	29.4	-	66	10	50	5	6	30	31	38	27	68	5.00	0	9,6,022</td												

TABLE 1.—Climatological data for Weather Bureau stations, January, 1924—Continued.

Districts and stations.	Elevation of instruments.			Pressure.			Temperature of the air.												Precipitation.			Wind.												
	Barometer above sea level.	Thermometer above ground.	Anerometer above ground.	Station reduced to mean of 24 hours.			Sea level, reduced to mean of 24 hours.	Departure from normal.	Mean maximum.			Maximum.	Date.	Mean minimum.			Mean wet thermometer.	Mean temperature of the dew point.			Mean relative humidity.	Days with 0.01 inch or more.			Total movement.			Prevailing direction.			Maximum velocity.			
				In.	In.	* F.	29.8	+ -3.8	* F.	* F.	* F.			* F.	* F.	* F.		* F.	* F.	Miles.		Total.	Departure from normal.	Days with 0.01 inch or more.	Total movement.	Prevailing direction.	Miles per hour.	Date.	Cloudy days.	Average cloudiness, tenths.	Snow, sleet, and ice on ground at end of month.			
Ohio Valley and Tennessee.	Ft.	Ft.	Ft.	In.	In.	* F.	29.8	+ -3.8	Mean maximum.	Maximum.	Date.	Mean minimum.	Minimum.	* F.	* F.	* F.	Mean wet thermometer.	Mean temperature of the dew point.	Greatest daily range.	Mean relative humidity.	Total.	Departure from normal.	Days with 0.01 inch or more.	Total movement.	Prevailing direction.	Miles per hour.	Date.	Cloudy days.	0-10 5.8	In.	In.	Snow, sleet, and ice on ground at end of month.		
Chattanooga.....	762	189	213	29.44	30.29	+ .13	35.5	-5.7	60	31	45	-1	6	26	32	30	23	23	83	6.24	+0.7	10	5,982	n.w.	42	sw.	16	10	12	9	5.0	T.	0.0	
Knoxville.....	906	102	111	29.16	30.25	+ .10	34.8	-4.0	68	30	45	-1	2	26	33	30	23	23	79	6.24	-0.7	9	4,056	sw.	29	sw.	11	11	11	5.0	T.	0.6	0.0	
Memphis.....	309	76	97	29.82	30.27	+ .11	36.4	-4.5	63	31	44	-1	5	29	28	32	26	26	65	6.15	+0.9	9	6,051	se.	32	n.w.	4	14	13	3	4.9	T.	0.0	
Nashville.....	546	163	191	29.68	30.29	+ .13	33.4	-5.2	60	31	45	-1	6	24	29	28	24	24	72	5.40	+0.6	10	7,176	n.w.	40	w.	10	13	13	5.6	T.	0.7	0.0	
Lexington.....	939	193	210	30.15	30.27	+ .14	29.5	-3.4	56	29	38	-6	6	21	27	21	17	17	50.00	+1.2	11	11,375	sw.	42	w.	11	11	13	5.6	T.	0.7	0.0		
Louisville.....	525	129	255	29.66	30.28	+ .14	29.0	-5.4	56	9	38	-7	5	20	31	26	19	19	66	4.65	+0.8	11	9,172	sw.	38	dw.	22	9	10	12	5.6	T.	1.0	0.0
Evansville.....	431	139	175	29.78	30.27	+ .13	28.9	-4.6	53	9	37	-13	5	15	33	22	18	18	77	3.13	+0.3	15	9,816	sw.	44	w.	25	11	11	5.5	T.	1.1	0.0	
Indianapolis.....	822	194	230	29.39	30.23	+ .11	23.5	-2.4	49	9	32	-13	10	18	21	20	17	17	2.06	.....	11	8,752	w.	37	w.	25	11	11	5.5	T.	1.1	0.0	
Royal Center.....	736	11	55	29.36	30.20	.....	10.0	.....	51	9	30	10	37	13	21	10	37	17	75	2.68	.....	12	8,019	s.	32	sw.	25	11	13	5.5	T.	0.0	0.0
Terre Haute.....	575	96	129	29.59	30.24	.....	21.8	.....	50	9	32	-13	5	15	35	22	17	17	75	2.68	.....	13	8,019	s.	32	sw.	25	11	13	5.5	T.	0.0	0.0
Cincinnati.....	628	11	61	29.54	30.25	+ .13	26.8	-3.5	54	9	35	-8	5	18	33	22	16	16	66	4.08	+0.7	15	6,725	sw.	32	sw.	25	10	13	5.7	T.	0.9	0.0	
Columbus.....	524	179	222	29.30	30.22	+ .11	26.0	-2.6	52	9	34	-8	6	18	32	23	19	19	76	3.85	+1.0	12	7,922	w.	41	n.w.	25	10	13	6.4	T.	2.8	0.0	
Dayton.....	899	137	173	29.29	30.22	+ .13	25.3	-3.6	56	9	33	-8	5	18	34	23	18	18	74	3.71	+0.7	13	8,750	sw.	46	n.w.	25	13	13	5.5	T.	3.0	0.0	
Elkins.....	1,047	50	67	28.08	30.23	+ .13	28.6	-1.8	61	11	41	-6	7	17	44	24	20	19	79	3.64	+0.3	9	5,458	sw.	34	w.	25	13	13	6.7	T.	2.2	0.0	
Parkersburg.....	638	77	84	29.57	30.25	+ .13	30.2	-2.3	59	10	39	-1	6	21	38	26	23	23	80	4.70	+1.5	11	5,280	sw.	35	dw.	25	7	8	16	6.8	T.	0.3	0.0
Pittsburgh.....	842	353	410	29.26	30.21	+ .10	28.7	-2.0	60	10	37	-3	6	20	39	25	19	19	79	3.53	+0.7	16	10,545	w.	47	dw.	25	2	6	23	8.4	T.	1.3	0.0
Lower Lake Region.							23.3	-1.2											77	2.81	+0.2										7.6			
Buffalo.....	767	247	280	29.25	30.12	+ .05	24.4	-0.2	52	10	32	-7	21	17	34	22	17	75	2.18	-1.1	19	19,254	w.	76	sw.	23	2	8	21	7.8	T.	9.0	0.0	
Canton.....	448	10	61	29.55	30.05	18.0	+1.7	51	11	28	-20	27	8	46	41	22	17	80	2.88	-0.3	16	10,209	sw.	55	w.	21	1	1	6	24	T.	26.7	4.2
Oswego.....	325	76	91	29.30	30.22	+ .03	25.0	+1.1	55	11	33	-16	27	17	34	22	17	80	2.88	-0.3	21	11,440	s.	44	n.w.	21	1	1	6	24	T.	10.0	0.0	
Rochester.....	523	66	102	29.51	30.11	+ .04	25.2	-6.6	53	11	33	-21	21	17	34	22	17	70	1.77	-1.4	19	8,997	w.	40	sw.	11	1	1	6	24	T.	24.8	2.2	
Syracuse.....	597	97	113	29.44	30.11	+ .04	25.8	+2.8	56	11	34	-15	21	18	32	22	17	70	2.49	+0.4	18	11,339	w.	43	sw.	23	2	8	22	8.0	T.	12.8	0.0	
Erie.....	714	130	166	29.33	30.13	+ .05	25.4	-1.4	53	11	34	-5	21	18	37	23	19	75	2.13	+0.1	19	14,210	sw.	50	se.	16	10	12	8	24	T.	8.7	1.0	
Cleveland.....	762	190	201	29.31	30.17	+ .08	24.0	-2.5	49	10	31	-6	6	16	42	31	19	76	3.38	+0.9	20	12,210	sw.	52	w.	25	1	8	22	8.7	T.	13.0	0.0	
Sandusky.....	629	62	70	29.46	30.18	+ .08	23.4	-2.9	49	10	31	-6	6	16	42	31	19	76	3.51	+0.7	15	6,873	sw.	37	sw.	25	12	17	7.6	T.	10.3	0.0		
Toledo.....	628	208	243	29.46	30.17	+ .08	22.6	-3.2	46	10	31	-9	6	15	39	19	16	78	2.59	+0.7	14	12,685	sw.	48	sw.	25	6	9	15	6.1	T.	8.1	0.0	
Fort Wayne.....	856	113	124	29.22	30.19	.....	20.8	-6.1	48	9	29	-14	5	12	39	19	16	78	2.49	.....	11	8,340	sw.	48	sw.	25	6	9	15	6.9	T.	10.1	0.0
Detroit.....	730	218	258	29.31	30.14	+ .06	21.8	-2.8	44	10	29	-9	21	15	41	21	18	84	2.46	+0.5	15	10,098	w.	52	sw.	6	4	12	15	6.9	T.	7.0	0.0	
Upper Lake Region.							13.6	-5.0										84	1.85	-0.2										7.0				
Alpena.....	609	13	92	29.36	30.06	+ .02	14.4	-6.4	47	40	29	21	-12	21	6	35	14	11	9,583	sw.	46	n.w.	25	4	6	21	7.4	T.	17.3	0.0				
Escanaba.....	612	54	60	29.38	30.09	+ .01	9.0	-6.4	47	36	30	18	-18	6	35	7	5	89	1.56	+0.3	16	7,293	sw.	33	n.w.	25	11	4	27	9.2	T.	24.9	3.4	
Grand Haven.....	612	54	89	29.40	30.12	+ .05	20.5	-3.8	48	27	31	-27	21	14	29	20	17	84	2.38	-0.4	20	11,245	w.	45	sw.	25	0	1	6	24	T.	18.0	0.0	
Grand Rapids.....	663	62	99	29.20	30.00	+ .01	8.2	-6.5	41	20	16	-13	21	13	36	19	15	80	2.00	-0.8	15	5,430	w.	28	w.	25	3	3	6	24	T.	18.5	0.0	
Lansing.....	878	111	141	29.14	30.12	.....	18.7	-3.3	43	9	28	-13	21	10	35	17	15	83	1.83	-0.3	18	5,538	sw.	24	dw.	25	10	5	10	18	T.	9.8	0.0
Ludington.....	636	66	69	29.36	30.03	.....	19.0	.....	40	8	28	-16	5	12	37	19	16	83	1.83	-0.3	18	10,880	sw.	49	sw.	6	11	11	19	19.7	T.	19.7	0.0
Marquette.....	734	77	111	29.27	30.08	+ .04	10.5	-5.4	50	28	19	-14	20	13	33	9	6	83	1.83	+1.6	23	8,779	w.	33	dw.	5	4	4	23	7.8	T.	36.9	17.9	
Port Huron.....	638	70	129	29.39	30.12	+ .06	20.2	-2.1	52	11	28	-21	9	21	13	37	17	84	1.65	-0.2	10	10,168	sw.	40	sw.	6	5	5	18	10	T.	17.9	0.0	
Saginaw.....	641	69	77	29.38	30.11	.....	17.9	-3.8	42	9	26	-11	21	10	37	17	14	83	1.33	-0.9	7	7,249	sw.	38	sw.	6	4	4	19	7.7	T.	7.2	0.2
Sault Ste. Marie.....	613	11	52	29.31	30.03	.....	10.7	-3.1	44	29	17	-26	27	11	32	7	5	87	2.71	+0.5	19	5,780	se.	36	sw.	25	2	5	14	24.5	T.	28.3	2.2
Chicago.....	823	140	210	29.25	30.18	+ .08	19.8	-5.3	48	9	28	-16	5	12	37	18	12	76	1.32	-0.7	9	9,394	w.	35	sw.	22	11	8	12	5.2	T.	11.5	0.0	
Green Bay.....	617	109	144	29.40	30.11	+ .07	8.4	-6.2	58	31	18	-2																						

TABLE 1.—Climatological data for Weather Bureau stations, January, 1924—Continued.

Districts and stations.	Elevation of instruments.		Pressure.				Temperature of the air.												Precipitation.		Wind.				Cloudiness, tenths.		Snow, sleet, and ice on ground at end of month.				
	Barometer above sea level	Thermometer above ground	Ft.	Ft.	In.	In.	• F.	• F.	• F.	• F.	Mean max. + mean min. + 2.	Departure from normal.	Mean maximum.	Date.	Mean maximum.	Mean minimum.	Greatest daily range.	Mean wet thermometer.	Mean temperature of the dew point.	Days with 0.01 inch or more.	Total movement.	Prevailing direction.	Miles per hour.	Date.	Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Total snowfall.		
	Barometer above ground	Anerometer above ground	Ft.	Ft.	In.	In.	• F.	• F.	• F.	• F.	Mean max. + mean min. + 2.	Departure from normal.	Mean maximum.	Date.	Mean maximum.	Mean minimum.	Greatest daily range.	Mean wet thermometer.	Mean temperature of the dew point.	Days with 0.01 inch or more.	Miles.										
<i>Northern Slope.</i>																															
Billings.....	3,140	5	27.46	30.19	+.09	17.7	-1.9	55	31	21	-32	1	5	50	0.31	0.48	-0.2	5	6,563	nw.	5	19	2	10	6.8	0.0					
Eureka.....	2,505	11	44	27.46	30.22	+.07	18.9	-2.2	53	31	26	-27	1	10	32	16	12	73	0.404	sw.	34	4	7	15	6.0	4.8	0.0				
Helena.....	4,110	87	112	25.84	30.22	+.07	18.9	-2.5	46	31	25	-25	1	11	19	17	14	82	0.91	-0.7	11	2,634	nw.	24	21	7.7	6.5	0.0			
Kalispell.....	2,973	48	56	27.02	30.21	+.12	17.9	-2.5	46	31	25	-25	1	0	41	3	72	0.35	-0.3	3	3,900	sw.	27	15	11	14	4.6	4.6	0.4		
Miles City.....	2,371	48	55	27.56	30.26	+.14	10.6	-3.9	46	30	21	-31	1	0	41	13	7	66	0.38	-0.1	5	5,050	w.	49	15	6	14	4.0	4.2	T.	
Rapid City.....	3,259	50	58	26.62	30.24	+.10	17.9	-4.1	59	31	32	-35	1	5	46	12	59	0.38	-0.1	6	12,405	w.	56	10	6	15	10.0	6.3	5.0		
Cheyenne.....	6,088	84	101	23.94	30.13	+.08	24.7	-0.8	52	30	35	-7	3	14	25	9	2	66	0.64	+0.2	4	2,719	sw.	44	10	7	15	9.5	6.2	5.0	
Lander.....	5,372	60	68	24.64	30.28	+.16	12.2	-6.1	47	31	24	-27	1	0	49	11	7	75	0.98	-1.4	15	6,126	s.	34	10	5	14	12.0	11.5	6.0	
Sheridan.....	3,790	10	47	26.12	30.21	+.14	14.2	-1.4	40	31	24	-17	4	8	30	14	10	75	0.80	-1.4	1	4,673	w.	32	9	15	10	6	4.0	1.0	
Yellowstone Park.....	6,200	11	48	24.85	30.28	+.14	16.2	-1.4	59	30	38	-20	5	8	43	16	11	75	0.08	-0.4	1	4,673	w.	32	9	15	10	6	8.8	0.0	
North Plate.....	2,821	11	51	27.15	30.24	+.11	21.4	-1.5	59	30	38	-20	5	8	43	16	11	75	0.08	-0.4	1	4,673	w.	32	9	15	10	6	4.0	1.0	
<i>Middle Slope.</i>							28.0	-2.4																					3.9		
Denver.....	5,292	106	113	24.70	30.14	+.09	29.6	-0.2	58	30	41	-5	1	18	44	23	16	61	0.52	+0.1	6	5,596	s.	36	3	14	11	6	4.5	8.6	0.0
Pueblo.....	4,685	80	86	25.29	30.13	+.08	27.8	-2.1	61	31	42	-10	15	10	41	22	16	61	0.41	+0.1	3	3,922	nw.	32	10	18	8	5	4.5	8.0	0.0
Concordia.....	1,392	50	58	28.66	30.21	+.07	20.8	-5.6	58	31	31	-18	5	10	41	18	14	78	0.95	+0.2	2	5,316	s.	29	9	17	7	3	3.8	9.2	T.
Dodge City.....	2,509	11	51	25.79	30.22	+.11	24.1	-0.9	61	31	42	-8	5	14	47	22	18	78	0.17	-0.3	4	7,077	nw.	37	9	21	4	6	2.9	2.1	0.0
Wichita.....	1,388	139	158	23.70	30.20	+.07	27.9	-3.4	62	30	38	-9	5	18	35	24	19	71	0.31	-0.5	10	10,288	s.	42	9	17	6	8	4.1	1.2	0.0
Broken Arrow.....	765	11	52	29.38	30.24		31.6		61	31	41	-2	5	21	31	19	11	9	1.36		10,164	s.	38	9	15	4	12	4.8	1.3	0.0	
Muskogee.....	652						34.4		66	30	44	0	5	21	36	29	23	70	0.18	-1.2	4	8,720	e.	28	9	19	7	11	2.0	0.1	0.0
Oklahoma City.....	1,214	10	47	28.89	30.23	+.12	34.0	-2.4	69	30	44	1	5	24	34	29	23	70	0.18	-1.2	4	8,720	s.	28	9	19	7	11	2.0	0.1	0.0
<i>Southern Slope.</i>							40.2	-1.8																					3.4		
Abilene.....	1,738	10	52	28.35	30.21	+.12	40.2	-2.4	71	31	53	15	1	28	36	33	25	64	0.19	-0.7	2	7,538	s.	38	9	16	7	8	4.0	T.	0.0
Amarillo.....	3,676	10	49	26.33	30.17	+.11	35.1	+1.2	65	30	49	7	1	21	41	27	21	67	0.14	-0.5	3	7,221	sw.	33	9	21	7	12	5.6	0.0	0.0
Del Rio.....	944	64	71	29.20	30.21	+.15	48.0	-3.7	72	24	50	26	7	37	43	40	34	76	0.14	-0.7	5	5,724	s.	34	9	21	7	12	5.6	0.0	0.0
Roswell.....	3,568	75	85	26.43	30.14	+.10	36.8	-2.4	66	30	52	12	21	22	41	28	17	51	0.25	-0.2	2	5,294	s.	39	9	27	4	0	1.4	1.6	0.0
<i>Southern Plateau.</i>							42.1	-1.2																					1.3		
El Paso.....	3,762	110	133	26.27	30.12	+.11	42.2	-1.9	66	31	54	21	6	30	32	33	29	45	0.40	-0.1	2	7,418	nw.	39	2	26	3	2	1.8	0.0	0.0
Santa Fe.....	7,011	38	53	21.22	30.16	+.12	27.0	-1.5	50	31	38	3	20	16	20	20	10	52	0.13	-0.5	3	5,512	n.	28	1	25	5	1	1.4	2.7	T.
Flagstaff.....	6,907	10	59	21.36	30.14		24.6		51	31	40	-12	2	10	45	19	14	76	0.06	-1.0	3	5,218	ne.	20	1	10	5	16	6.0	1.3	T.
Phoenix.....	1,105	76	81	28.92	30.10	+.07	50.4	-0.8	74	31	66	23	3	35	39	40	27	48	0.00	-1.2	2	3,516	e.	28	14	27	2	2	2.5	T.	0.0
Yuma.....	141	9	54	29.97	30.12	+.07	53.0	-1.4	75	31	66	31	3	40	34	41	24	38	0.00	-0.4	3	3,202	n.	21	1	30	1	0	0.8	0.0	0.0
Independence.....	3,957	5	23	26.12	30.25	+.18	38.0	-0.2	65	31	54	7	2	22	40	27	10	35	0.00	-0.9	0	4,693	nw.	40	9	27	3	1	1.5	0.1	0.0
<i>Middle Plateau.</i>							23.6	-4.6																					4.3		
Reno.....	4,572	74	81	25.61	30.30	+.17	30.5	-2.0	62	30	44	-4	2	17	43	27	19	68	0.16	-1.6	4	2,724	ne.	41	8	15	8	8	4.1	2.4	0.0
Tonopah.....	6,000	12	20	24.12	30.29	+.20	28.6	-7.9	45	31	35	-16	2	6	39	19	14	76	0.06	-1.0	3	5,218	se.	20	8	22	8	1	2.1	1.5	0.0
Winnemucca.....	4,344	18	56	25.79	30.36	+.20	20.7	-7.9	45	31	35	-16	2	6	39	19	14	76	0.06	-1.0	3	5,218	ne.	20	8	22	8	1	2.1	1.5	0.0
Modena.....	5,479	10	41	21.71	30.25	+.15	21.1	-2.5	53	31	40	-14	2	9	45	19	11	61	0.17	-0.6	3	6,040	w.	43	8	22	8	1	2.1	1.5	0.0
Salt Lake City.....	4,360	161	201	25.78	30.30	+.15	25.0	-4.2	42	29	32	8	2	18	21	20	19	80	0.20	-0.9	3	5,319	nw.	29	3	10	8	13	7.5	7.4	0.0
Grand Junction.....	4,602	60	68	25.53	30.28	+.22	17.2	-6.8	44	29	30	-4	13	4	31	14	12	82	0.35	-0.1	5	2,468	nw.	14	8	15	12	3	3.5	3.5	0.0
<i>Northern Plateau.</i>							25.5	-3.0																					2.3		
Baker.....	3,471	48	51	26.61	30.33	+.17	21.4	-2.5	45	31	30	-12	1	12	26	20	17	82	0.34	-1.0	6	4,195	se.	20	10	5	21	7	5.2	0.0	
Boise.....	2,739	78	86	27.39	30.38	+.19	21.6	-6.0	50	30	31	0	7	16	2	22	18	77	0.10	-1.5	7	2,45	nw.	17	27	6	11	14	5.5	0.0	
Lewiston.....	757																														

TABLE II.—Data furnished by the Canadian Meteorological Service, January, 1924.

Stations.	Altitude above mean sea level, Jan. 1, 1919. Feet.	Pressure.			Temperature of the air.						Precipitation.		
		Station reduced to mean of 24 hours.	Sea level reduced to mean of 24 hours.	Departure from normal.	Mean max. + mean min. + 2.	Departure from normal.	Mean maximum.	Mean minimum.	Highest.	Lowest.	Total.	Departure from normal.	Total snowfall.
St. Johns, N. F.	125	29.61	29.75	-11	22.7	-1.1	28.9	16.6	48	5	5.96	+0.05	38.0
Sydney, C. B. I.	43	29.94	29.99	+06	23.2	+2.7	31.8	14.5	48	-7	6.44	+1.34	39.0
Halifax, N. S.	88	29.91	30.02	+05	24.5	+2.7	34.5	14.6	49	-10	6.47	+0.70	22.5
Yarmouth, N. S.	65	29.93	30.00	.00	28.6	+2.3	37.4	19.9	50	-6	6.08	+0.67	23.3
Charlottetown, P. E. I.	38	29.92	29.96	.00	19.2	+2.2	29.2	9.2	45	-15	2.47	-1.49	16.5
Chatham, N. B.	28	29.98	29.92	-05	10.0	+0.2	23.1	-3.1	42	-28	3.35	-0.24	25.7
Father Point, Que.	20	29.95	29.98	.00	5.2	-2.8	14.9	-4.4	36	-22	2.50	-0.35	20.6
Quebec, Que.	296	29.70	30.04	+02	10.0	+0.9	19.2	0.8	37	-26	4.73	+0.72	41.3
Montreal, Que.	187	29.83	30.06	+02	14.3	+2.6	24.1	4.4	41	-23	4.96	+1.23	35.5
Ottawa, Ont.	236	29.79	30.08	+05	12.6	+3.0	24.3	1.0	44	-28	5.59	+2.60	45.4
Kingston, Ont.	285	29.75	30.09	+04	21.3	+4.2	30.3	12.3	45	-23	3.41	-0.04	8.9
Toronto, Ont.	379	29.66	30.09	+04	23.4	+2.0	30.8	16.0	43	-6	4.89	+1.97	25.4
Cochrane, Ont.	930	28.59	30.00	-01	-7.0	-----	3.6	-17.6	34	-42	1.30	-----	13.0
White River, Ont.	1,244	28.59	30.00	-01	-7.3	+6.9	8.8	-23.4	34	-57	1.61	-0.08	16.1
Port Stanley, Ont.	592	29.48	30.15	+08	-----	-----	-----	-----	-----	-----	3.82	+0.88	12.6
Southampton, Ont.	656	29.30	-----	-----	20.6	+0.2	27.5	13.7	40	-11	4.62	+0.57	35.6
Parry Sound, Ont.	688	29.32	30.06	+05	12.8	-1.0	23.4	2.2	38	-30	7.01	+2.93	66.9
Port Arthur, Ont.	644	29.33	30.09	+02	-2.2	-5.3	6.8	-11.1	40	-30	0.41	-0.41	4.1
Minnedosa, Man.	1,690	28.16	30.11	+01	-5.0	+2.2	4.6	-14.6	34	-35	0.95	+0.15	9.5
LePas, Man.	890	-----	-----	-----	-9.1	-----	1.2	-19.4	38	-37	0.26	-----	2.6
Qu'Appelle, Sask.	2,115	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Medicine Hat, Alb.	2,144	27.70	30.07	.00	10.9	+5.4	20.8	1.0	51	-30	1.92	+1.35	19.2
Moose Jaw, Sask.	1,759	-----	-----	-----	1.9	-----	11.0	-7.2	47	-36	0.36	-----	3.6
Swift Current, Sask.	2,392	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Calgary, Alb.	3,428	28.37	30.12	+09	13.7	+5.3	27.1	0.3	57	-25	0.84	+0.31	8.4
Banff, Alb.	4,521	25.32	30.13	+13	12.5	+0.4	21.7	3.2	45	-35	0.69	-0.50	6.9
Edmonton, Alb.	2,150	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Prince Albert, Sask.	1,450	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Battleford, Sask.	1,592	28.88	30.23	+07	21.5	-1.5	27.2	15.8	50	-17	1.64	+0.82	16.4
Kamloops, B. C.	1,262	29.88	30.14	+07	40.3	+1.8	43.9	36.7	55	17	2.65	-2.74	0.1
Victoria, B. C.	230	29.88	30.14	+07	20.3	+2.5	26.9	13.7	41	-25	2.34	-0.26	22.2
Barkerville, B. C.	4,180	25.57	29.98	+09	-----	-----	-----	-----	-----	-----	-----	-----	-----
Triangle Island, B. C.	680	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Prince Rupert, B. C.	170	-----	-----	-----	38.2	-----	42.8	33.6	53	15	18.82	-----	0.3

LATE REPORTS, DECEMBER, 1923.

Father Point, Que.	20	29.92	29.95	.00	23.7	+8.3	28.8	18.6	50	-2	2.53	-0.30	15.7
Winnipeg, Man.	760	29.10	29.96	-06	17.8	+13.7	25.5	10.0	44	-20	0.29	-0.62	2.9
Medicine Hat, Alb.	2,144	27.57	29.89	-08	24.9	+6.7	34.1	15.7	54	-30	0.41	-0.14	4.1
Calgary, Alb.	3,428	26.26	29.96	+02	21.3	+3.1	35.3	7.4	52	-35	1.08	+0.49	10.8
Banff, Alb.	4,521	25.24	30.00	+06	18.3	-0.8	25.7	10.9	41	-40	1.97	+0.76	19.7
Kamloops, B. C.	1,262	28.71	30.03	+09	29.7	+0.8	34.6	24.8	48	-17	1.23	+0.45	8.0
Barkerville, B. C.	4,180	25.45	29.84	-04	19.4	-1.5	26.1	12.7	40	-28	4.84	+1.67	45.8

SEISMOLOGICAL REPORTS FOR JANUARY, 1924.

W. J. HUMPHREYS, Professor in Charge.

[Weather Bureau, Washington, March 3, 1924.]

SEISMOLOGICAL ABBREVIATIONS USED IN THE INSTRUMENTAL REPORTS.

CHARACTER OF THE EARTHQUAKE.

I=noticeable.
II=conspicuous.
III=strong.d=(terra motus domesticus)=local earthquake (sensible or felt).
v=(terra motus vicinus)=near-by earthquake (within 1,000 km.).
r=(terra motus remotus)=distant earthquake (1,000 to 5,000 km. distant).
u=(terra motus ultimus)=very distant earthquake (beyond 5,000 km.).
 Δ =distance to epicenter.

PHASES.

P=(undæ primæ)=first preliminary tremors.
PR_n=P waves reflected n times at the earth's surface.
S=(undæ secundæ)=second preliminary tremors.
SR_n=S waves reflected n times at the earth's surface.
PS=transformed waves; longitudinal (P) to transverse (S) or vice versa.
L=(undæ longæ)=long waves in the principal portion.
M=(undæ maximæ)=greatest motion in the principal portion.

C=(coda)=trailers.

O=time at epicenter.

L_{rep1}=long waves reaching the station from the antiepicenter (40,000 km. - Δ).L_{rep2}=long waves again reaching the station from the antiepicenter (40,000 km. + Δ).

F=(finis)=end of perceptible trace.

NATURE OF THE MOTION.

i=(impetus)=abrupt beginning.

e=(emersion)=gradual appearance.

T=(period)=twice time of oscillation.

A=amplitude of earth's movement, reckoned from the zero line. E, N, or Z attached to a symbol signifies the E-W, the N-S, or the vertical component, respectively, thus:

P_E is the E-W component of P.P_N is the N-S component of P.P_Z is the vertical component of P. μ =micron, $\frac{1}{1000}$ mm.

INSTRUMENTAL CONSTANTS.

T_v=period of instrument.

V=magnification of instrument.

e=damping ratio.